AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

1-30.   (Canceled).

31.   (Currently Amended) An image processing apparatus capable of correcting the gradation of image data, comprising:

brightness data separation means for separating brightness data and color data from the image data;

area discrimination means for discriminating areas to which the image data belong and outputting discrimination results;

coefficient calculation means for outputting correction coefficients to be used for correction of pixel values of the brightness data based on the discrimination results received from said area discrimination means; and

correction means for correcting the pixel values of the brightness data and the color data with the correction coefficients; wherein

the coefficient calculation means sets the correction coefficients at a fixed value when a signal level of the discrimination results is less than or equal to a prescribed value, and the coefficient calculation means sets the correction coefficients at a value less than the fixed value when the signal level of the discrimination results is greater

<u>than the prescribed value</u>.

32.   (Currently Amended) An image processing apparatus according to claim 31, wherein ~~said~~ <u>the</u> area discrimination means detects a characteristic amount indicative of a characteristic of a predetermined range neighboring to each of the brightness data and outputting the discrimination <u>results determined according to the characteristic amount.</u> ~~result, and said coefficient calculation means outputs the correction coefficients based on the characteristic amounts received from said area discrimination means.~~

33.   (Currently Amended) An image processing apparatus according to claim 31, wherein ~~said~~ <u>the</u> area discrimination means includes a low-pass filter for extracting a low frequency component of each of the brightness data~~, and said coefficient calculation means produces the correction coefficients in response to the low frequency components received from said low-pass filter~~.

34.   (Currently Amended) An image processing apparatus according to claim 31, wherein ~~said~~ <u>the</u> area discrimination means includes quantization means for quantizing the brightness data, and a low-pass filter for extracting a low frequency component from each of the brightness data quantized by ~~said~~ <u>the</u> quantization means~~, and said coefficient calculation means produces the correction coefficients in response to the low frequency components received from said low-pass filter~~.

35.   (Currently Amended) An image processing apparatus according to claim 31, wherein ~~said~~ the area discrimination means includes a plurality of low-pass filters for individually extracting low frequency components of each of the brightness data, and signal composition means for producing single composite signals based on the low frequency components outputted from ~~said~~ the low-pass filters~~, and said coefficient calculation means produces the correction coefficients based on the composite signals received from said signal composition means~~.

36.   (Currently Amended) An image processing apparatus according to claim 35, wherein ~~said~~ the signal composition means weighted averages the low frequency components outputted from ~~said~~ the low-pass filters to produce the composite signals.

37.   (Currently Amended) An image processing apparatus according to claim 35, wherein ~~said~~ the signal composition means weighted adds the low frequency components outputted from ~~said~~ the low-pass filters with weighting coefficients set in advance to produce the composite signals.

38.   (Currently Amended) An image processing apparatus according to claim 31, wherein ~~said~~ the area discrimination means includes a plurality of low-pass filters for individually extracting low frequency components of ~~each of~~ the brightness data, and ~~said~~ the coefficient calculation means includes partial coefficient calculation means for producing coefficients for correction from the low frequency components outputted from ~~said~~ the low-pass filters~~, and coefficient composition means for producing the correction~~

~~coefficients based on the coefficients for correction~~.

39.   (Currently Amended) An image processing apparatus according to claim 38, wherein ~~said~~ the coefficient composition means weighted adds the coefficients for correction to produce the correction coefficients.

40.   (Currently Amended) An image processing apparatus according to claim 38, wherein ~~said~~ the coefficient composition means weighted adds the coefficients for correction with weighting coefficients set in advance to produce the correction coefficients.

41.   (Currently Amended) An image processing apparatus according to claim 31, wherein ~~said~~ the correction means multiplies the pixel values of the brightness data and the color data by the correction coefficients to correct the pixel values of the image data.

42.   (Currently Amended) An image processing apparatus according to claim 31, wherein the number of bits of the brightness data outputted from ~~said~~ the correction means is smaller than the number of bits of the image data.

43.   (Original) An image processing apparatus according to claim 31, wherein the image data are data obtained by sampling a signal, wherein the amplitude modulated color signal is sequentially superposed on the brightness signal, with a predetermined frequency.

44.   (Currently Amended) An image processing method for correcting the gradation

of image data, comprising:

~~a brightness data separation step of~~ separating brightness data and color data

from the image data;

~~an area discrimination step of~~ discriminating areas to which the image data

belong and outputting discrimination results;

setting correction coefficients at a fixed value when a signal level of the

discrimination results is less than or equal to a prescribed value;

setting the correction coefficients at a value less than the fixed value when the

signal level of the discrimination results is greater than the prescribed value;

~~a coefficient calculation step of~~ outputting the correction coefficients to be used

for correction of pixel values of the brightness data based on the discrimination results;

and

~~a correction step of~~ correcting the pixel values of the brightness data and the

color data with the correction coefficients.

45.   (Currently Amended) An image processing method according to claim 44,

wherein ~~the area discrimination step detects~~ discriminating areas further comprises

detecting a characteristic amount indicative of a characteristic of a predetermined range

neighboring to each of the brightness data and outputting the discrimination results

determined according to the characteristic amount. ~~result, and the coefficient~~

~~calculation step outputs the correction coefficients based on the characteristic amounts.~~

46.   (Currently Amended) An image processing method according to claim 44,

wherein ~~the area discrimination step extracts~~ discriminating areas further comprises

extracting a low frequency component of ~~each of~~ the brightness data~~, and the coefficient~~

~~calculation step produces the correction coefficients in response to the low frequency~~

~~components~~.

47.   (Currently Amended) An image processing method according to claim 44,

wherein ~~the area discrimination step includes a quantization step of~~ discriminating areas

further comprises quantizing the brightness data, and ~~a step of~~ extracting a low

frequency component from ~~each of~~ the quantized brightness data ~~quantized by the~~

~~quantization step, and the coefficient calculation step produces the correction~~

~~coefficients in response to the low frequency components~~.

48.   (Currently Amended) An image processing method according to claim 44,

wherein ~~the area discrimination step includes an extraction step of~~ discriminating areas

further comprises extracting a plurality of low frequency components of ~~each of~~ the

brightness data with different frequency bands, and ~~a signal composition step of~~

producing single composite signals based on the low frequency components~~, and the~~

~~coefficient calculation step produces the correction coefficients based on the composite~~

~~signals~~.

49.   (Currently Amended) An image processing method according to claim 48, further comprising ~~wherein the signal composition step~~ weighted averaging ~~averages~~ the low frequency components to produce the composite signals.

50.   (Currently Amended) An image processing method according to claim 48, further comprising ~~wherein the signal composition step~~ weighted adding ~~adds~~ the low frequency components to ~~with~~ weighting coefficients set in advance to produce the composite signals.

51.   (Currently Amended) An image processing method according to claim 44, wherein ~~the area discrimination step extracts~~ discriminating areas further comprises extracting a plurality of low frequency components of each of the brightness data with different frequency bands~~, and the coefficient calculation step includes a partial coefficient calculation step of producing coefficients for correction from the low frequency components, and a coefficient composition step of producing the correction coefficients based on the coefficients for correction~~.

52.   (Currently Amended) An image processing method according to claim 51, further comprising ~~wherein the coefficient composition step~~ weighted averaging ~~averages~~ the coefficients for correction to produce the correction coefficients.

53.   (Currently Amended) An image processing method according to claim 51, further comprising ~~wherein the coefficient composition step~~ weighted adding ~~adds~~ the

coefficients for correction with weighting coefficients set in advance to produce the

correction coefficients.

54.   (Currently Amended) An image processing method according to claim 44,

wherein correcting the pixel values comprises multiplying ~~the correction step multiplies~~

the pixel values of the brightness data and the color data by the correction coefficients

to correct the pixel values of the image data.

55.   (Currently Amended) An image processing method according to claim 44,

wherein the number of bits of the corrected brightness data ~~obtained from the correction~~

~~step~~ is smaller than the number of bits of the image data.

56.   (Original) An image processing method according to claim 44, wherein the

image data are data obtained by sampling a signal, wherein the amplitude modulated

color signal is sequentially superposed on the brightness signal, with a predetermined

frequency.

57.   (Withdrawn) An image processing apparatus capable of correcting the gradation

of image data formed from a brightness signal and a color signal sequentially

superposed on the brightness signal in a time divisional relationship, comprising:

characteristic amount detection means for successively detecting a characteristic

amount indicative of a predetermined range neighboring to each of pixels of the image

data;

area discrimination means for discriminating areas to which the image data

belong based on the characteristic amounts and outputting discrimination results;

coefficient calculation means for outputting correction coefficients to be used for

correction of the pixel values of the image data based on the discrimination results; and

correction means for correcting the pixel values of the image data with the

correction coefficients.

58.   (Withdrawn) An image processing apparatus according to claim 57, wherein said

characteristic amount detection means successively detects a maximum value of the

pixel values in the predetermined neighboring range as the characteristic amount.

59.   (Withdrawn) An image processing apparatus according to claim 57, wherein said

characteristic amount detection means successively detects a minimum value of the

pixel values in the predetermined neighboring range as the characteristic amount.

60.   (Withdrawn) An image processing apparatus according to claim 57, wherein said

characteristic amount detection means successively detects a maximum value and a

minimum value of the pixel values in the predetermined neighboring range and detects

the characteristic amount based on the maximum value and the minimum value.

61.   (Withdrawn) An image processing apparatus according to claim 57, wherein said

characteristic amount detection means successively detects a maximum value and a

minimum value of the pixel values in the predetermined neighboring range and

composes the maximum value and the minimum value in response to an average value of the image data to detect the characteristic amount.

62.   (Withdrawn) An image processing apparatus according to claim 57, wherein said area discrimination means includes a low-pass filter for extracting a low frequency component of each of the characteristic amounts, and said coefficient calculation means produces the correction coefficients in response to the low frequency components received from said low-pass filter.

63.   (Withdrawn) An image processing apparatus according to claim 57, wherein said area discrimination means includes quantization means for quantizing the characteristic amounts, and a low-pass filter for extracting a low frequency component from each of the characteristic amounts quantized by said quantization means, and said coefficient calculation means produces the correction coefficients in response to the low frequency components received from said low-pass filter.

64.   (Withdrawn) An image processing apparatus according to claim 57, wherein said area discrimination means includes a plurality of low-pass filters for individually extracting low frequency components of each of the characteristic amounts, and signal composition means for producing single composite signals based on the low frequency components outputted from said low-pass filters, and said coefficient calculation means produces the correction coefficients based on the composite signals received from said signal composition means.

65. (Withdrawn) An image processing apparatus according to claim 64, wherein said signal composition means weighted averages the low frequency components outputted from said low-pass filters to produce the composite signals.

66. (Withdrawn) An image processing apparatus according to claim 57, wherein said signal composition means weighted adds the low frequency components outputted from said low-pass filters with weighting coefficients set in advance to produce the composite signals.

67. (Withdrawn) An image processing apparatus according to claim 57, wherein said area discrimination means includes a plurality of low-pass filters for individually extracting low frequency components of each of the characteristic amounts, and said coefficient calculation means includes partial coefficient calculation means for producing coefficients for correction from the low frequency components outputted from said low-pass filters, and coefficient composition means for producing the correction coefficients based on the coefficients for correction.

68. (Withdrawn) An image processing apparatus according to claim 67, wherein said coefficient composition means weighted averages the coefficients for correction to produce the correction coefficients.

69. (Withdrawn) An image processing apparatus according to claim 67, wherein said

coefficient composition means weighted adds the coefficients for correction with weighting coefficients set in advance to produce the correction coefficients.

70.   (Withdrawn) An image processing apparatus according to claim 57, wherein said correction means multiplies the pixel values of the image data by the correction coefficients to correct the pixel values of the image data.

71.   (Withdrawn) An image processing apparatus according to claim 57, wherein the number of bits of the image data outputted from said correction means is smaller than the number of bits of the image data inputted to said characteristic amount detection means.

72.   (Withdrawn) An image processing method for correcting the gradation of image data formed from a brightness signal and a color signal sequentially superposed on the brightness signal in a time divisional relationship, comprising:

a characteristic amount detection step of successively detecting a characteristic amount indicative of a predetermined range neighboring to each of pixels of the image data;

an area discrimination step of discriminating areas to which the image data belong based on the characteristic amounts and outputting discrimination results;

a coefficient calculation step of outputting correction coefficients to be used for correction of the pixel values of the image data based on the discrimination results; and

a correction step of correcting the pixel values of the image data with the

correction coefficients.

73.   (Withdrawn) An image processing method according to claim 72, wherein the

characteristic amount detection step successively detects a maximum value of the pixel

values in the predetermined neighboring range as the characteristic amount.

74.   (Withdrawn) An image processing method according to claim 72, wherein the

characteristic amount detection step successively detects a minimum value of the pixel

values in the predetermined neighboring range as the characteristic amount.

75.   (Withdrawn) An image processing method according to claim 72, wherein the

characteristic amount detection step successively detects a maximum value and a

minimum value of the pixel values in the predetermined neighboring range and detects

the characteristic amount based on the maximum value and the minimum value.

76.   (Withdrawn) An image processing method according to claim 72, wherein the

characteristic amount detection step successively detects a maximum value and a

minimum value of the pixel values in the predetermined neighboring range and

composes the maximum value and the minimum value in response to an average value

of the image data to detect the characteristic amount.

77.   (Withdrawn) An image processing method according to claim 72, wherein the

area discrimination step extracts a low frequency component of each of the

characteristic amounts, and the coefficient calculation step produces the correction

coefficients in response to the low frequency components.

78.   (Withdrawn) An image processing method according to claim 72, wherein the

area discrimination step quantizes the characteristic amounts and extracts a low

frequency component from each of the characteristic amounts quantized by the

quantization, and the coefficient calculation step produces the correction coefficients in

response to the low frequency components.

79.   (Withdrawn) An image processing method according to claim 72, wherein the

area discrimination step includes a signal extraction step of extracting a plurality of low

frequency components of each of the characteristic amounts with different frequency

bands, and a signal composition step of producing single composite signals based on

the low frequency components., and the coefficient calculation step produces the

correction coefficients based on the composite signals.

80.   (Withdrawn) An image processing method according to claim 79, wherein the

signal composition step weighted averages the low frequency components to produce

the composite signals.

81.   (Withdrawn) An image processing method according to claim 79, wherein the

signal composition step weighted adds the low frequency components with weighting

coefficients set in advance to produce the composite signals.

82.   (Withdrawn) An image processing method according to claim 72, wherein the area discrimination step extracts a plurality of low frequency components of each of the characteristic amounts with different frequency bands, and the coefficient calculation step includes a partial coefficient calculation step of producing coefficients for correction from the low frequency components, and a coefficient composition step of producing the correction coefficients based on the coefficients for correction.

83.   (Withdrawn) An image processing method according to claim 82, wherein the coefficient composition step weighted averages the coefficients for correction to produce the correction coefficients.

84.   (Withdrawn) An image processing method according to claim 82, wherein the coefficient composition step weighted adds the coefficients for correction with weighting coefficients set in advance to produce the correction coefficients.

85.   (Withdrawn) An image processing method according to claim 72, wherein the correction step multiplies the pixel values of the image data by the correction coefficients to correct the pixel values of the image data.

86.   (Withdrawn) An image processing method according to claim 72, wherein the number of bits of the image data outputted from the correction step is smaller than the

number of bits of the image data inputted.

87.   (Withdrawn) An image processing apparatus capable of correcting the gradation of image data, comprising:

area discrimination means for discriminating areas to which the image data belong and outputting discrimination results;

coefficient calculation means for outputting correction coefficients to be used for correction of pixel values of the image data based on the discrimination results; and

correction means for correcting the pixel values of the image data with the correction coefficients;

said area discrimination means or said coefficient calculation means producing the discrimination results or the correction coefficients such that the resolution of the correction coefficients may be switched in response the pixel values of the image data.

88.   (Withdrawn) An image processing apparatus according to claim 87, wherein said area discrimination means or said coefficient calculation means produces the discrimination results or the correction coefficients such that the resolution of the correction coefficients decreases as the variation of an output value with respect to a variation of an input value in an input/output characteristic of said correction means with regard to the image data decreases.

89.   (Withdrawn) An image processing apparatus according to claim 87, wherein said

- 18 -

area discrimination means detects a characteristic amount indicative of a characteristic

of a predetermined range neighboring to each of the image data and outputting the

discrimination result, and said coefficient calculation means outputs the correction

coefficients based on the characteristic amounts received from said area discrimination

means.

90.   (Withdrawn) An image processing apparatus according to claim 87, wherein said

area discrimination means varies the resolution of the discrimination results in response

to the pixel values of the image data to switch the resolution of the correction

coefficients.

91.   (Withdrawn) An image processing apparatus according to claim 87, wherein said

coefficient calculation means corrects the correction coefficients in response to the pixel

values of the image data to switch the resolution of the correction coefficients.

92.   (Withdrawn) An image processing apparatus according to claim 87, wherein said

area discrimination means includes a low-pass filter for extracting a low frequency

component of each of the image data and outputting the discrimination result.

93.   (Withdrawn) An image processing apparatus according to claim 87, wherein said

area discrimination means includes a plurality of low-pass filters having different pass-

band widths for individually extracting low frequency components of each of the image

data, and signal composition means for composing the low frequency components

outputted from said low-pass filters to produce the discrimination results.

94.   (Withdrawn) An image processing apparatus according to claim 93, wherein said

signal composition means weighted averages the low frequency components outputted

from said low-pass filters to produce the discrimination results.

95.   (Withdrawn) An image processing apparatus according to claim 87, wherein said

area discrimination means includes a plurality of low-pass filters for individually

extracting low frequency components of each of the image data and outputting the

discrimination results, and said coefficient calculation means includes partial coefficient

calculation means for producing coefficients for correction from the low frequency

components outputted from said low-pass filters, and coefficient composition means for

producing the correction coefficients based on the coefficients for correction.

96.   (Withdrawn) An image processing apparatus according to claim 95, wherein said

coefficient composition means composes the coefficients for correction in response to

the image data to produce the correction coefficients.

97.   (Withdrawn) An image processing apparatus according to claim 95, wherein said

coefficient composition means weighted averages the coefficients for correction in

response to the image data to produce the correction coefficients.

98.   (Withdrawn) An image processing apparatus according to claim 87, wherein said

correction means multiplies the pixel values of the image data by the correction

coefficients to correct the pixel values of the image data.

99.   (Withdrawn) An image processing apparatus according to claim 87, wherein the

number of bits of the image data outputted from said correction means is smaller than

the number of bits of the image data inputted to said image processing apparatus.

100.   (Withdrawn) An image processing apparatus according to claim 87, wherein the

image data are data obtained by sampling a signal, wherein an amplitude modulated

color signal is sequentially superposed on a brightness signal in a time divisional

relationship, with a predetermined frequency.

101.   (Withdrawn) An image processing apparatus according to claim 87, wherein the

image data are data obtained by sampling a brightness signal and a color difference

signal with a predetermined frequency.

102.   (Withdrawn) An image processing method for correcting the gradation of image

data, comprising:

an area discrimination step of discriminating areas to which the image data

belong and outputting discrimination results;

a coefficient calculation step of outputting correction coefficients to be used for

correction of pixel values of the image data based on the discrimination results; and

a correction step of correcting the pixel values of the image data with the

correction coefficients;

the area discrimination step or the coefficient calculation step producing the

discrimination results or the correction coefficients such that the resolution of the

correction coefficients may be switched in response the pixel values of the image data.

103.   (Withdrawn) An image processing method according to claim 102, wherein the

area discrimination step or the coefficient calculation step produces the discrimination

results or the correction coefficients such that the resolution of the correction

coefficients decreases as the variation of an output value with respect to a variation of

an input value in an input/output characteristic of the correction step with regard to the

image data decreases.

104.   (Withdrawn) An image processing method according to claim 102, wherein the

area discrimination step detects a characteristic amount indicative of a characteristic of

a predetermined range neighboring to each of the image data and outputting the

discrimination result, and the coefficient calculation step outputs the correction

coefficients based on the characteristic amounts.

105.   (Withdrawn) An image processing method according to claim 102, wherein the

area discrimination step varies the resolution of the discrimination results in response to

the pixel values of the image data to switch the resolution of the correction coefficients.

106. (Withdrawn) An image processing method according to claim 102, wherein the area discrimination step corrects the correction coefficients in response to the pixel values of the image data to switch the resolution of the correction coefficients.

107. (Withdrawn) An image processing method according to claim 102, wherein the area discrimination step extracts a low frequency component of each of the image data and outputs the discrimination result.

108. (Withdrawn) An image processing method according to claim 102, wherein the area discrimination step includes a signal extraction step of extracting a plurality of low frequency components of each of the image data with different pass-band widths, and a signal composition step of composing the low frequency components to produce the discrimination results.

109. (Withdrawn) An image processing method according to claim 108, wherein the signal composition step weighted averages the low frequency components to produce the discrimination results.

110. (Withdrawn) An image processing method according to claim 102, wherein the area discrimination step extracts a plurality of low frequency components of each of the image data with different pass-band widths and outputs the discrimination results, and the coefficient calculation step includes a partial coefficient calculation step of producing coefficients for correction from the low frequency components, and a coefficient

composition step of producing the correction coefficients based on the coefficients for correction.

111.   (Withdrawn) An image processing method according to claim 110, wherein the coefficient composition step composes the coefficients for correction in response to the image data to produce the correction coefficients.

112.   (Withdrawn) An image processing method according to claim 110, wherein the coefficient composition step weighted averages the coefficients for correction in response to the image data to produce the correction coefficients.

113.   (Withdrawn) An image processing method according to claim 102, wherein the correction step multiplies the pixel values of the image data by the correction coefficients to correct the pixel values of the image data.

114.   (Withdrawn) An image processing method according to claim 102, wherein the number of bits of the image data obtained by the correction step is smaller than the number of bits of the image data inputted.

115.   (Withdrawn) An image processing method according to claim 102, wherein the image data are data obtained by sampling a signal, wherein an amplitude modulated color signal is sequentially superposed on a brightness signal in a time divisional relationship, with a predetermined frequency.

116. (Withdrawn) An image processing method according to claim 102, wherein the image data are data obtained by sampling a brightness signal and a color difference signal with a predetermined frequency.